Claims

1. A method for setting a correlation between the duration of a period (T_{A01}) of at least one spray nozzle (01) of a spray dampening unit, which delivers a dampening agent (02) in discontinuous flow amounts, and the duration of a revolution (T_{03}) of a forme cylinder (03), or the duration of a revolution (T_{04}) of a damping unit roller (04) of the spray dampening unit, characterized in that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of the period (nT_{A01}, wherein n = 1, 2, 3 ...), is set in comparison with the duration of the revolution (T_{03}) of the forme cylinder (03), the duration of the revolution (T_{04}) of the dampening unit roller (04), or their whole-number multiples (nT_{03}, nT_{04}, wherein n = 1, 2, 3 ...) in such a way that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of this period (nT_{A01}, wherein n = 1, 2, 3 ...) during the operation of the spray dampening unit corresponds, at the earliest starting with three times the duration of the revolutions (T_{03}, T_{04}) of the forme cylinder (03) or the dampening unit roller (04), to the duration of a revolution (T_{03}) of the forme cylinder (03), the duration of a revolution (T_{04}) of the dampening unit roller (04), or their whole-number multiple (nT_{03}, nT_{04}, wherein n = 1, 2, 3 ...).

2. A method for setting a correlation between the duration of a period (T_{A01}) of at least one spray nozzle (01)

of a spray dampening unit, which delivers a dampening agent (02) in discontinuous flow amounts, and the duration of a revolution (T_{03}) of a forme cylinder (03), or the duration of a revolution (T_{04}) of a damping unit roller (04) of the spray dampening unit, characterized in that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of the period (nT_{A01}, wherein n = 1, 2, 3 ...), is set as a function of the diameter (D_{03}) of the forme cylinder (03), or of the diameter (D_{04}) of the dampening unit cylinder, in such a way that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of this period (nT_{A01}, wherein n = 1, 2, 3 ...) during the operation of the spray dampening corresponds unit, at the earliest starting with three times the duration of the revolutions (T_{03}, T_{04}) of the forme cylinder (03) or the dampening unit roller (04), to the duration of a revolution (T_{03}) of the forme cylinder (03), the duration of a revolution (T_{04}) of the dampening unit roller (04), or their whole-number multiple (nT_{03}, nT_{04}, wherein n = 1, 2, 3 ...).

3. The method in accordance with claim 1 or 2, characterized in that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of the period (nT_{A01}, wherein n = 1, 2, 3 ...), during the operation of the spray dampening unit corresponds, at the earliest starting after ten times the duration of the revolutions (T_{03}, T_{04}) of the forme cylinder (03) or the dampening unit roller (04), to the

duration of the revolution (T_{03}) of the forme cylinder (03), the duration of the revolution (T_{04}) of the dampening unit roller (04), or their whole-number multiple (nT_{03}, nT_{04}, wherein n = 1, 2, 3 ...).

4. The method in accordance with claim 1 or 2, characterized in that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of the period (nT_{A01}, wherein n = 1, 2, 3 ...), during the operation of the spray dampening unit corresponds during none of the durations of the revolutions (T_{03}, T_{04}) of the forme cylinder (03) or the dampening unit roller (04) to the duration of the revolution (T_{03}) of the forme cylinder (03), the duration of the revolution (T_{04}) of the dampening unit roller (04), or their whole-number multiple (nT_{03}, nT_{04}, wherein n = 1, 2, 3 ...).

5. The method in accordance with claim 1 or 2, characterized in that the spray nozzle (01), which is arranged fixed in place in regard to the dampening unit roller (04) at least during the delivery of the dampening agent (02), delivers the dampening agent (02) along a circumference (U_{04}) of the dampening unit roller (04).

6. The method in accordance with claim 5, characterized in that the dampening unit roller (04) receives the dampening agent (02) along its circumference (U_{04}) in the course of its rotation.

7. The method in accordance with claim 1 or 2, characterized in that the dampening agent roller (04) transfers the dampening agent (02) at least in part to the forme cylinder (03).

8. The method in accordance with claim 1 or 2, characterized in that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, is composed of the duration of delivery (T_{on}) of the spray nozzle (01) and an off-time (T_{off}) of the spray nozzle (01).

9. The method in accordance with claim 8, characterized in that the duration of the delivery (T_{on}) of the spray nozzle (01), its off-time (T_{off}), or both times (T_{on}, T_{off}) can be variably set.

10. The method in accordance with claim 8, characterized in that a duration of the period (T_{A01}) is variable.

11. The method in accordance with claim 1 or 2, characterized in that a chronological difference (Delta T_1) between the duration of the revolution (T_{03}) of the forme cylinder (03) or the duration of the revolution (T_{04}) of the dampening unit (04), and the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of the period (nT_{A01}, with n = 1, 2, 3...) is greater than a duration of the delivery (T_{on}) of the spray nozzle (01), if the duration of

the period (T_{A01}), within which the dampening agent (02) is delivered, or a whole-number multiple of this duration of the period (nT_{A01}, with n = 1, 2, 3...) is less than the duration of the revolution (T_{03}) of the forme cylinder (03) or the duration of the revolution (T_{04}) of the dampening unit roller (04).

12. The method in accordance with claim 1 or 2, characterized in that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered is set to a value, which lies outside of an interval (X), whose lower threshold value (t_u) is formed by a whole-number multiple ((n+1) * T_{03}, (n+1) * T_{04}, wherein n = 1, 2, 3 ...), of the duration of the revolution (T_{03}) of the forme cylinder (03) or the duration of the revolution (T_{04}) of the dampening unit roller (04), which next follows the previously mentioned duration of the period (T_{A01}), and is reduced by the duration of delivery (t_{on}) of the spray nozzle (01), and whose upper threshold value (t_o) is formed by the whole-number multiple ((n+1) * T_{03}, (n+1) * T_{04}, wherein n = 1, 2, 3 ...), of the duration of the revolution (T_{03}) of the forme cylinder (03), or the duration of the revolution (T_{04}) of the dampening unit roller (04), which next follows the duration of the period (T_{A01}), if the duration of the period (T_{A01}), within which the dampening agent (02) is delivered, is greater than a whole-number multiple ((n+1) * T_{03}, (n+1) * T_{04},wherein n = 1, 2, 3 ...), of the duration of the revolution (T_{03}) of the forme cylinder (03) or the duration of the revolution (T_{04}) of the dampening unit cylinder (04), which directly precedes the lower threshold value (t_u).

13. The method in accordance with claim 1 or 2, characterized in that in a spray dampening unit with several dampening unit rollers (04) a total time (T), consisting of a duration of a period (T_{A01}), within which the dampening agent (02) is delivered by the spray nozzle (01) to the damping unit roller (04), and a duration of transport (T_{TR}), required by at least one further dampening unit roller (04) between its receipt of the dampening agent (02) until the at least partial transfer thereof to the forme cylinder (03), is not equal to a whole-number multiple of the duration of the revolution (nT_{03}, wherein n = 1, 2, 3 ...) of the forme cylinder (03).

14. The method in accordance with claim 1 or 2, characterized in that a film consisting of the dampening agent (02) of a layer thickness of 1 μm to 10 μm is applied to the forme cylinder (03).

15. The method in accordance with claim 8, characterized in that the duration of the delivery (T_{on}) of the spray nozzle (01), its off-time (T_{off}), or both times (T_{on}, T_{off}) are set in such a way that the desired correlation between the duration of the period (T_{A01}) for delivering the dampening agent (02) and the duration of the rotation (T_{03}) of the forme cylinder (03) or of the duration of rotation (T_{04}) of the dampening unit roller (04) is met.

16. The method in accordance with claim 15, characterized in that setting of the duration of the delivery (T_{on}) of the spray nozzle (01), its off-time (T_{off}), or both

times (T_{on}, T_{off}) takes place as a function of the duration of the rotation (T_{03}) of the forme cylinder (03) or the duration of the rotation of the dampening unit roller (04).

17. The method in accordance with claim 15, characterized in that setting of the duration of the delivery (T_{on}) of the spray nozzle (01), its off-time (T_{off}), or both times (T_{on}, T_{off}) takes place while taking into consideration a gear ratio existing between the forme cylinder (03) and the dampening unit roller (04) because of different diameters (D_{03}, D_{04}).

18. The method in accordance with claim 8, characterized in that the duration of delivery (T_{on}) of the dampening agent (02) periodically delivered by the spray nozzle (01) and the duration of its period (T_{A01}) start at the same time.

19. The method in accordance with claim 1 or 2, characterized in that the duration of the period (T_{A01}) within which the dampening agent (02) is delivered, or the duration of the period (T_{A03}) of the forme cylinder (03) for receiving the dampening agent (02), are at least double the duration of the revolution (T_{03}) of the forme cylinder (03).

20. The method in accordance with claim 11, characterized in that the difference (Delta T_1) between the duration of the revolution (T03) of the forme cylinder (03) and the duration of the period (T_{A01}) during which the dampening agent (02) is delivered, or of the duration of the

period (T_{A03}) for receiving the dampening agent (02), or their whole-number multiples (nT_{A01}, nT_{A03}, wherein n = 1, 2, 3 ...) is at most one-tenth of the duration of rotation (T_{03}) of the forme cylinder (03).

21. The method in accordance with claim 11, characterized in that the duration of the interval (X) is at most one-tenth of the duration of rotation (T_{03}) of the forme cylinder (03).

22. The method in accordance with claim 11 or 12, characterized in that the duration of rotation (T_{03}) of the forme cylinder (03) is not equal to a whole-number multiple of the difference (nDelta T_1) or of the interval (nX), wherein each is n = 1, 2, 3 ....

23. The method in accordance with claim 1 or 2, characterized in that the spray nozzle (01) delivers the dampening agent (02) to at least one rotating dampening unit roller (04), and the dampening unit roller (04) transfers the dampening agent (02) at least in part to the forme cylinder (03) at a contact point (06) with the forme cylinder (03).

24. The method in accordance with claim 1 or 2, characterized in that several rotating dampening unit rollers (04) are provided, wherein one of the dampening unit rollers (04) receives the dampening agent (02) delivered by the spray nozzle (01), and transfers it at least in part to a subsequent dampening agent roller (04) at a contact point (07).

25. The method in accordance with claim 24, characterized in that the dampening rollers (04) differ from each other in their diameter (D_4) or the duration of their revolution (T_{04}).

26. The method in accordance with claim 23, characterized in that the diameter (D_4) of at least one dampening unit roller (04) is less than a diameter (D_3) of the forme cylinder (03).

27. The method in accordance with claim 11 or 12, characterized in that the correlations mentioned in regard to the duration of the revolution (T_{03}) of the forme cylinder (03) apply correspondingly to the correlation between the duration of the period (T_{A01}) within which the dampening agent (02) is delivered and the duration of the revolution (T_{04}) of the dampening unit roller (04).

28. The method in accordance with claim 1 or 2, characterized in that the correlations mentioned in regard to the duration of the revolution (T_{03}) of the forme cylinder (03) or the duration of the revolution (T_{04}) of the dampening unit roller (04) apply at least in regard to an upper third of the value range of the duration of the revolution (T_{03}) of the forme cylinder (03) or the duration of the revolution (T_{04}) of the dampening unit roller (04).

29. The method in accordance with claim 1 or 2, characterized in that the correlations mentioned in regard to the duration of the revolution (T_{03}) of the forme cylinder

(03) or the duration of the revolution (T_{04}) of the dampening unit roller (04) apply over the entire value range of the duration of the revolution (T_{03}) of the forme cylinder (03) or the duration of the revolution (T_{04}) of the dampening unit roller (04).

30. The method in accordance with claim 1 or 2, characterized in that a total time (T), consisting of a duration of a period (T_{A01}), within which the dampening agent (02) is delivered by the spray nozzle (01) to the damping unit roller (04), and a duration of transport (T_{TR}), required by the at least one dampening unit roller (04) between its receipt of the dampening agent (02) until the at least partial transfer thereof to the forme cylinder (03), is not equal to a whole-number multiple of the duration of the revolution (nT_{03}, wherein n = 1, 2, 3 ...) of the forme cylinder (03).

31. The method in accordance with claim 30, characterized in that a time difference (Delta T_2) between the duration of the revolution (T_{03}) of the forme cylinder (03) and the total time (T) is greater than a duration of delivery (T_{on}) of the spray nozzle (01), if the total time (T) or a whole-number multiple of this total time (nT, wherein n = 1, 2, 3 ....) is less than the duration of the revolution (T_{03}) of the forme cylinder (03).

32. The method in accordance with claim 30, characterized in that the total time (T) is set to a value, which lies outside of an interval (X), whose lower threshold

value (t_u) is formed by a whole-number multiple ((n+1) * T_{03}, wherein n = 1, 2, 3 ...), of the duration of the revolution (T_{03}) of the forme cylinder (03), which next follows the total time (T) and is reduced by the duration of delivery (t_{on}) of the spray nozzle (01), and whose upper threshold value (t_o) is formed by the whole-number multiple ((n+1) * T_{03}, wherein n = 1, 2, 3 ...), of the duration of the revolution (T_{03}) of the forme cylinder (03), which next follows the total time (T), if the total time (T) is greater than a whole-number multiple ((n+1) * T_{03}, wherein n = 1, 2, 3 ...), of the duration of the revolution (T_{03}) of the forme cylinder (03), which directly precedes the lower threshold value (t_u).

33. The method in accordance with claim 1 or 2, characterized in that at least one dampening unit roller (04) is arranged axially in respect to the forme cylinder (03).

34. The method in accordance with claim 1 or 2, characterized in that the spray nozzle (01) ejects the dampening agent (02) in a pulse-like manner.

35. The method in accordance with claim 1 or 2, characterized in that several spray nozzles (01), which are spaced apart from each other, are arranged in the axial direction of the forme cylinder (03), or at least of one of the dampening agent rollers (04).

36. The method in accordance with claim 8, characterized in that the duration of delivery (T_{on}) of the

spray nozzle (01), its off-time (T_{off}), or both times (T_{on}, T_{off}) can be set to be variable by remote control from a control console of an assigned printing press.

37. The method in accordance with claim 8, characterized in that the duration of delivery (T_{on}) of the spray nozzle (01), its off-time (T_{off}), or both times (T_{on}, T_{off}) can be set or updated, wherein the program determines at least one setting as the function of each value of the duration of revolution (T_{03}) of the forme cylinder (03), or of the duration of revolution (T_{04}) of the dampening unit roller (04), which meets the required correlation.

38. The method in accordance with claim 37, characterized in that the program provides a warning regarding an unfavorable or impermissible setting, which does not meet the required correlations.

39. The method in accordance with claim 37 or 38, characterized in that the program excludes a setting which does not meet the correlations.

40. A method for setting a spraying frequency of a spray dampening unit, having at least one spray nozzle (01) which applies dampening agent (02) and a roller (03, 04), which receives dampening agent (02), characterized in that the spraying frequency of the spray nozzle (01) is set as a function of the rotating frequency of the roller (03, 04) receiving dampening agent in such a way that the spraying frequency avoids overlaying of sprayed-on dampening agent

(02) at least for a defined number of subsequent rotations of the roller (03, 04) receiving dampening agent.

41. A method for setting a spraying frequency of a spray dampening unit, having at least one spray nozzle (01) which applies dampening agent (02) and a roller (03, 04), which receives dampening agent (02), characterized in that the spraying frequency of the spray nozzle (01) is set as a function of the diameters (D_{03}, D_{04}) of the roller (03, 04) receiving dampening agent in such a way that the spraying frequency avoids overlaying of sprayed-on dampening agent (02) at least for a defined number of subsequent rotations of the roller (03, 04) receiving dampening agent.

42. The method in accordance with claim 40 or 41, characterized in that, in connection with a spray dampening unit with several spray nozzles (01) in the axial direction of the roller (03, 04) receiving dampening agent, their spraying frequency is set in such a way that the spraying frequency avoids overlaying of sprayed-on dampening agent (02) at least for a defined number of subsequent rotations of the roller (03, 04) receiving dampening agent.

43. The method in accordance with claim 40, 41 or 42, characterized in that the spraying frequency avoids overlaying of sprayed-on dampening agent (02) at least for two subsequent rotations of the roller (03, 04) receiving dampening agent.

44. The method in accordance with claim 40, 41 or 42, characterized in that the spraying frequency avoids overlaying of sprayed-on dampening agent (02) at least for five subsequent rotations of the roller (03, 04) receiving dampening agent.

45. The method in accordance with claim 40, 41 or 42, characterized in that the spraying frequency avoids overlaying of sprayed-on dampening agent (02) at least for ten subsequent rotations of the roller (03, 04) receiving dampening agent.

46. The method in accordance with claim 40, 41 or 42, characterized in that the spraying frequency avoids overlaying of sprayed-on dampening agent (02) for any arbitrary number of subsequent rotations of the roller (03, 04) receiving dampening agent.

47. The method in accordance with claim 40 or 41, characterized in that the spray nozzle (01) sprays the dampening agent (02) along the circumference (U_{03}, U_{04}) of the roller (03, 04) receiving dampening agent.

48. The method in accordance with claim 1, 2, 40 or 41, characterized in that it is employed in an offset rotary printing press.